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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,530	03/30/2004	Marcus Marchesi Martins	TI-35630	3298
23494	7590	08/23/2005	EXAMINER	
TEXAS INSTRUMENTS INCORPORATED P O BOX 655474, M/S 3999 DALLAS, TX 75265			NGUYEN, KHANH V	
			ART UNIT	PAPER NUMBER
			2817	
DATE MAILED: 08/23/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/812,530

Applicant(s)

MARTINS, MARCUS MARCHESI

Examiner

Khanh V. Nguyen

Art Unit

2817

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-13 and 15-20 is/are rejected.
- 7) ☒ Claim(s) 5 and 14 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 7, 10, 16, 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Sauer (6,433,637).

Regarding claims 1, 7, 10, 16, 19, Sauer (Figs. 1-4) discloses a rail-to-rail input/output operational amplifier comprising: inputs (INp, INn) for receiving data signals; transistors (MN10, MN11, MP20, MP21) can be read as a first circuit; and transistors (MP100-MP102, MN100-MN102 and MP103 and MN103) can be read as a second circuit, wherein first and second circuits together operable for providing class AB output (OUTAB) to drive a load, wherein transistors (MP103 and MN103) are configured as source/sink current.

Regarding claims 2, 11 wherein first and second circuits operable as current mirror.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3, 4, 6, 8, 9, 12, 13, 15, 17, 18, 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sauer.

Regarding claims 3, 6, 12, 15 the difference between claim 3 and Sauer is the specific ratio of the current mirror. However, the exact ratio used would be a result effective variable set by component values, current mirror transistors etc. and cannot of itself be considered patentable distinct from Sauer.

Regarding claims 4, 13, 20, the difference between claim 4 and Sauer is the specified voltages. However, the specified voltages used would be a result effective variable set by input voltages, input signal level etc. and cannot of itself be considered patentable distinct from Sauer.

Regarding claims 8, 17, Sauer discloses the claimed invention except D/A converter and reference signal coupled to the input. However, in any practical use of Sauer device the inputs (INp, INn) would be connected to a further circuit which could be read as the claimed D/A converter and reference signal. Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the circuit of Sauer in combination with a D/A converter and reference signal such that the signal input to the circuit is an analog signal.

Regarding claims 9, 18, Sauer discloses the claimed invention except the circuit is an integrated circuit on a semiconductor chip. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have integrated all components on a semiconductor chip because it is simpler and does not require a cumbersome circuit.

***Allowable Subject Matter***

Claims 5, 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 5, 14 call for, among others, first and second circuit operable with different supply rails.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The additional reference (Ivanov et al. (6,317,000)) shows further analogous prior art circuitry having Class AB.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh V. Nguyen whose telephone number is (571) 272-1767. The examiner can normally be reached from 8:00 AM - 3:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on (571) 272-1769. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

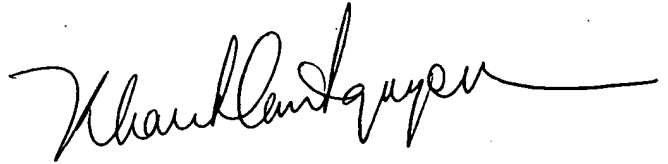
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

Application/Control Number: 10/812,530

Page 5

Art Unit: 2817

you have questions on access to the Private PAIR system, contact the Electronic  
Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Khanh Van Nguyen', with a long horizontal flourish extending to the right.

**KHANH VAN NGUYEN**  
**PRIMARY EXAMINER**  
**Art Unit: 2817**